APPENDIX A

```
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* international treaties. Unauthorized reproduction or
 * distribution of this program, or any portion of it, may
 * result in severe civil and criminal penalties, and will
 * be prosecuted to the maximum extent possible under the law.
 ***********************
/*********************
 * Exception handling
 ******************
function rmi_handleError (err, url, line)
   // alert('BAD: \n' + err + '.\n' + url + '\nline no: ' + line);
   // window.status = 'BAD: \n' + err + '.\n' + url + '\nline no: ' + line;
   window.status = "Javascript: Done (" + line + ")";
   return true;
                       // error is handled
window.onerror = rmi_handleError;
/*********************
************************
var rmi Vars = "/rmivars%3ftarget= top";
var rmi FramesetTagCounter = 0;
var rmi CookieDomain = ".yahoo.com";
// delete the 1st character, <.</pre>
rmi FrameWrapper = rmi_FrameWrapper.substring(1, rmi FrameWrapper.length);
/********************
 * Translate a string, then write to the browser.
 ****************
function rmi_writeln(obj, str)
   var newStr;
   if (arguments.length == 2) {
      newStr = rmi xlate(str);
      if (obj == document && (typeof document.layers != "undefined")
             && (typeof document.layers['rmilayer'] != "undefined") )
```

```
document.layers['rmilayer'].document.writeln(newStr);
       else
           obj.writeln(newStr);
   } else {
       newStr = rmi_xlate(obj); // for backward compatibility with hseds
       document.writeln(newStr);
   }
}
function rmi_write(obj, str)
   var newStr;
   if (arguments.length == 2) {
       newStr = rmi_xlate(str);
       if (obj == document && (typeof document.layers != "undefined")
               && (typeof document.layers['rmilayer'] != "undefined") )
           document.layers['rmilayer'].document.write(newStr);
       else
           obj.write(newStr);
   } else {
       newStr = rmi xlate(obj); // for backward compatibility with hseds
       document.write(newStr);
 * String utilities
**********************
function rmi_startsWith(full, sub)
   var fullLower = full.toLowerCase();
   var subLower = sub.toLowerCase();
   var index = fullLower.indexOf(subLower);
   return index ? false : true;
function rmi endsWith(full, sub)
   var fullLower = full.toLowerCase();
   var subLower = sub.toLowerCase();
   var offset = fullLower.length - subLower.length;
   if (offset < 0) return false;
   var index = fullLower.indexOf(subLower, offset);
   return (index==offset) ? true : false;
}
function rmi_endsExactlyWith(full, sub)
   var offset = full.length - sub.length;
   if (offset < 0) return false;
   var index = full.indexOf(sub, offset);
   return (index==offset) ? true : false;
```

```
}
/* gets the port of an URL */
function rmi getPort(url)
    var host = rmi getHost(url);
                                       // get "host:port"
    var begin = host.indexOf(":");
    if (begin == -1 || (host.length - begin) < 2)
                                                       // e.g. length of ':80'
        return (rmi_getProtocol(url) == "https") ? "443" : "80" ;
    }
    else
        return host.substring(begin+1, host.length); // +1 for ':'
}
/* gets the protocol of an URL */
function rmi_getProtocol(url)
    var index = url.indexOf("://");
    return url.substring(0, index);
/* http://HOST/whatever
 * return HOST
 */
function rmi_getHost(url)
   var end = url.indexOf("://");
   var next = end + 3;
    end = url.indexOf("/", next);
    if (end == -1) end = url.length;
   return url.substring(next, end);
}
/* http://HOSTNAME:port/whatever
 * return HOSTNAME
function rmi getHostname(url)
    var host = rmi_getHost(url);
                                       // get "host:port"
   var index = host.indexOf(":");
    if (index == -1)
       return host;
    else
       return host.substring(0, index);
/* http://host/FILE
 * return FILE
function rmi_getFile(url)
```

```
var end = url.indexOf("://");
   var next = end + 3;
   end = url.indexOf("/", next);
   if (end == -1)
        return "/";
   else
        return url.substring(end, url.length);
}
/* PROTOCOL://HOST/FILE
 * return URLRoot == PROTOCOL://HOST
function rmi getURLRoot(url)
   var protocol = rmi_getProtocol(url);
   var host = rmi_getHost(url);
   return protocol + "://" + host
function rmi_dirname(full)
   var dir = full;
   // Remove cgi parameters (e.g. "?k1=v1&k2=v2...")
   // because the parameters might have '/'
   var ind = dir.indexOf('?');
   if ( ind >= 0 ) dir = dir.substring(0, ind);
    ind = dir.lastIndexOf('/');
                                     // search from right
    if (ind == -1) return "";
                                     // no slash
    if (ind == 0) return "/";
                                     // root
    if ( rmi endsExactlyWith(dir.substring(0, ind+1), "://") )
        ind = dir.length;
   return dir.substring(0, ind);
}
/* Trim leading & ending quotes
*/
function rmi_trimQuotes(str)
   var first = str.charAt(0);
    if (first == '"') return (str.substring(1, str.length-1));
    if (first == '\'') return (str.substring(1, str.length-1));
   return str;
/* Trim leading & ending spaces
*/
function rmi_trim(str)
    if (typeof str == "undefined") return "";
```

```
var start = 0;
   var end = str.length;
   for (var i=0; i < str.length; ++i)</pre>
       if (str.charAt(i) == ' ') continue;
       start = i;
       break;
    for (\text{var i=str.length-1}; i >= 0 ; --i)
       if (str.charAt(i) == ' ') continue;
       end = i + 1;
       break;
   return str.substring(start, end);
 * Normalize URL
 *******************
function rmi_normalizeURL(in_url)
   var url = in_url.toString();
   var first = url.charAt(0);
   if (first == '"') url = url.substring(1, url.length-1);
   var ret = url;
   if ( rmi_startsWith(url, "http://") )
       ret = url;
   else if ( rmi startsWith(url, "https://") )
       ret = url;
   else if ( rmi startsWith(url, "/") )
       ret = rmi_getURLRoot(rmi BaseURL) + url;
   else if ( rmi_startsWith(url, "#") )
       ret = document.location + url;
   else
               // relative
       var dir = rmi_dirname(rmi_BaseURL);
       ret = dir + "/" + url;
   return ret;
}
```

```
/*********************
 * Translate a URL (in the case of form action)
 * If the incoming code is the form of location=url
  then we return location=rmi xlateURL(url)
*****************
function rmi_xlateAction(action_url)
   var ret = "";
   var url = action url.toString();
   if ( rmi startsWith(url, "location=") ) {
      var new_loc = url.substring(url.indexOf("=")+1, url.length);
      ret = "location='" + rmi_xlateURL(new_loc) + "'";
   } else {
      ret = rmi xlateURL(url);
   if (rmi_JsDebug.indexOf(",rmi_xlateAction,") != -1)
       alert("rmi_xlateAction: old: " + action_url + "\n" + "new: " + ret);
   return ( ret );
}
/*********************
* Translate a URL
* Note: if url is already starts with rmi proxy url it will
     not be translated again.
****************
function rmi_xlateURL(in_url)
   var ret = "";
   var url = in_url.toString();
   var first = url.charAt(0);
   if (first == '"') url = url.substring(1, url.length-1);
   if (first == '\'') url = url.substring(1, url.length-1);
   // Ignore javascript:
   if ( rmi startsWith(url, "javascript:") )
       return url;
   url = rmi_normalizeURL(url);
   if ( rmi_startsWith(url, rmi_ProxyURL) ||
        rmi startsWith(url, rmi_SecureProxyURL) | |
        rmi_endsWith(url, ".jpg") ||
        rmi_endsWith(url, ".jpeg") ||
        rmi endsWith(url, ".gif")
       return url;
   }
       Collapse the file part of an URL
```

```
*/
   var urlroot = rmi_getURLRoot(url);
   var file = pathCollapse(rmi_getFile(url));
   ret = urlroot + file;
   if ( rmi startsWith(url, "https://"))
       ret = rmi_SecureProxyURL + ret;
   else
       ret = rmi_ProxyURL + ret;
   if (rmi FrameWrapperMode && rmi_UrlTarget == " top") // onTop & wrapper
mode
       ret = rmi appendToUrl(ret, rmi Vars);
   if (rmi JsDebug.indexOf(",rmi xlateURL,") != -1)
       alert("rmi xlateURL:\n" + "in url: " + in url + "\n" + "ret: " + ret +
"\n");
   return ret;
/***********************
 * Get original (before RMI) location property (href, host, etc)
    *****************
function rmi_getOriginal(loc, prop)
   var origUrl = "" + loc;
   var url = "" + loc;
   var index = url.indexOf("/rmi/");
   var ret = "";
   if (index != -1)
      origUrl = url.substring(index+5, url.length);  // Get string after
"/rmi/"
   if (prop == "host")
       ret = rmi_getHostname(origUrl) + ":" + rmi_getPort(origUrl);
   else if (prop == "hostname")
       ret = rmi_getHostname(origUrl);
   else if (prop == "port")
       ret = rmi getPort(origUrl);
   else if (prop == "pathname")
       var path = rmi_getFile(origUrl);
       ret = (path.indexOf("?") == -1 ) ? path : path.substring(0,
path.indexOf("?"));
   else if (prop == "search")
       var path = rmi_getFile(origUrl);
       ret = (path.indexOf("?") == -1) ? "" : path.substring(path.indexOf("?"),
path.length);
   else
                              // location, location.href, & all others
       ret = origUrl;
```

```
// Remove RMI var string (e.g. /rmivars%3f...).
   // KEEP text before AND after RMI var strings
   var rmiVarStr = "/rmivars";
                            // length of "/rmivars?" for IE
   var rmiVarStrLen = 9;
   var i rmiVarStr = ret.indexOf(rmiVarStr);
   var head = (i_rmiVarStr == -1) ? ret : ret.substring(0, i_rmiVarStr);
   var tail = "";
                              // RMI var string exists
   if (i_rmiVarStr != -1)
      var i1 = ret.indexOf("?", i_rmiVarStr + rmiVarStrLen);
      var i2 = ret.indexOf("#", i_rmiVarStr + rmiVarStrLen);
      if (i1 != -1) tail = ret.substring(i1, ret.length);
      else if (i2 != -1) tail = ret.substring(i2, ret.length);
   return head + tail;
/*********************
* Get original (before RMI) document.domain property
****************
function rmi_getOriginalDomain()
   var origUrl = "" + window.location;
   var url = origUrl;
   var index = url.indexOf("/rmi/");
   var ret = "";
   if (index != -1)
      "/rmi/"
   ret = rmi getHostname(origUrl);
   // Remove RMI tail string (e.g. /rmivars%3f...)
   var rmiTail = "/rmivars%3f";
   ret = (ret.indexOf(rmiTail) == -1) ? ret : ret.substring(0,
ret.indexOf(rmiTail));
   return ret;
/*******************
 * Return a frame object
 ******************
function rmi_getFrame(win, index)
   if (!rmi FrameWrapperMode) return (win.frames[index]);
   // FrameWrapperMode from here on...
```

```
if ((typeof index) == "number")
       if (win == top)
          return(win.frames[index+1]); // +1 due to Yahoo's extra frame
           return(win.frames[index]);
   else
                                        // string & other types
       return(win.frames[index]);
}
/**********************
 * Get the current dimension of the RMI bar
* h = rmi_getBarDimensions("height")
 * <FUTURE> w = rmi_getBarDimensions("width")
 ******************
function rmi getBarDimensions(dimType)
   var doc;
   var defaultRet = 50;
   if (top.frames.length == 0) // non-frame site
       doc = document;
   else
           doc = top.frames[0].document;
       return defaultRet;
   }
   if ( window.navigator.appName.toLowerCase().indexOf("microsoft") != -1 )
   {
       // IE
       if (typeof doc.all.rmi_south_gif == "undefined")
          return defaultRet;
       else
       {
           if (dimType == "height")
              return doc.all.rmi_south_gif.offsetTop;
          else
              return defaultRet;
       }
   }
   else
       // netscape
       if (typeof doc.rmi_south_gif == "undefined")
          return defaultRet;
       else
```

```
if (dimType == "height")
              return doc.rmi_south_gif.y;
              return defaultRet;
       }
   }
                         // no match (shouldn't be here)
   return defaultRet;
/*********************
 * Translate the options before opening a window (e.g. window.open)
***************
function rmi_xlateWinOpt(options)
   var tokens = options.split(",");
   var ret = "";
   for (var i=0; i<tokens.length; ++i)</pre>
       var pair = tokens[i].split("=");
       var key = rmi_trim(pair[0]);
       var val = rmi_trim(pair[1]);
       if (key == "height")
          var offset = rmi_getBarDimensions(key);
          if (val == "") val = "0";
                                               // if no height value!
          val = "" + (parseInt(val) + offset);
       }
       if (i != 0) ret += ",";
       if (val == "")
                                   // if no value
          ret += key;
       else
          ret += key + "=" + val;
   }
   return ret;
/**********************
 * Open a window (using a window object from 1st argument)
function rmi_winobj_open(winobj, url, target, options)
   //alert(url);
   //alert(target);
   //alert(options);
   var win;
   if (arguments.length == 2)
       win = winobj.open(rmi xlateURL(url));
   else if (arguments.length == 3)
```

```
win = winobj.open(rmi_xlateURL(url), target);
   else
      win = winobj.open(rmi_xlateURL(url), target, rmi_xlateWinOpt(options));
   if (win != null) win.opener = self;
   return win;
/*********************
* Open a window (using a default window object)
********************
function rmi_window_open(url, target, options)
   //alert(url);
   //alert(target);
   //alert(options);
   var win;
   if (arguments.length == 1)
      win = window.open(rmi_xlateURL(url));
   else if (arguments.length == 2)
      win = window.open(rmi xlateURL(url), target);
   else
      win = window.open(rmi_xlateURL(url), target, rmi_xlateWinOpt(options));
   if (win != null) win.opener = self;
   return win;
}
function rmi_window_open_self(url)
   return window.open(rmi_xlateURL(url), "_self");
/********************
* Get 'top' window for RMI
*****************
function rmi getTop(win)
   if (rmi FrameWrapperMode)
                                                         // frame wrapper
mode
       return win;
                                                         // old frame
   else if (top.frames.length > 1)
mode
       return (win == top) ? top._rmi_bottom : win;
                                                         // non-frame
   else
mode
       return win;
 * Translate a target URL, then replace the document in
 * the target window
```

```
function rmi_replace(win, url)
   if (win == "") win = self;
   if (rmi FrameWrapperMode)
       if (win == top)
           win.location.replace(rmi xlateURL(url) + rmi Vars);
       else
           win.location.replace(rmi_xlateURL(url));
   else if (top.frames.length > 1)
                                              // old frame mode
        if (win == top)
           top._rmi_bottom.location.replace(rmi_xlateURL(url));
           win.location.replace(rmi xlateURL(url));
    }
   else
                                                    // non-frame mode
       win.location.replace(rmi_xlateURL(url));
}
/*********************
 * Handle location setting for different modes after JS translation
 * <Sample translation>
 * From: window.top.parent.location.href = url;
    To: rmi_setLocation("window.top", ".parent.location.href",
rmi xlateURL(url), window.top.parent);
function rmi_setLocation(s1, s2, url, win)
   var frameName = "";
   var newUrl = url;
    if (rmi_FrameWrapperMode)
        //@@ if (rmi startsWith(s2, ". location"))
        if (win == top)
               frameName = "";
               newUrl = rmi appendToUrl(url, rmi Vars);
        // Handle topmost frames
        var aWin = eval(s1);
        var array = s2.split(".");
        var head = rmi_trim(array[0]);
        if (aWin == top && rmi_startsWith(head, "frames" ))
            var i0 = head.indexOf("[");
            var i1 = head.indexOf("]");
            var num = 0;
            num = head.substring(i0+1, i1);
```

```
if (num >= 0)
                             // If a valid frame number, increment it
                array[0] = "frames[" + (++num) + "]";
                s2 = array.join(".");
        }
   }
                                    // old mode
   else
        frameName = "._rmi_bottom";
       newUrl = url
   var code = s1 + frameName + "." + s2 + " = \"" + newUrl + "\";";
   eval(code);
    if (rmi_JsDebug.indexOf(",rmi_setLocation,") != -1)
        alert("rmi setLocation:\n" + "url: " + url + "\n" + "code: " + code +
"\n");
 * Xlate a String
   * If it returns a value different from str
     rmi_xlate will return new value.
 * else (i.e. rmi_xlate_merchant returns str)
     rmi_xlate will do regular processing
*/
function rmi_xlate_merchant(str)
    // alert("merchant dummy function");
   return str;
}
function rmi xlate(pStr)
   var xlatedStr = "";
   var iSearch, iFrame, iImg, length, startLoc, endLoc;
   var offset1, offset2, head, src, tail;
   var str = "" + pStr;
                                           // to string to be sure
   var lowercaseStr = str.toLowerCase();
   // invoke merchant specific stuff
    //
   xlatedStr = rmi_xlate_merchant(str);
   if (xlatedStr != str) return xlatedStr;
    var parseStr = rmi parseloop(str);
    if (parseStr != str) return parseStr;
```

```
//xlatedStr = rmi xlate_src href(str);
   //if (parseStr != str) {
      if (parseStr != xlatedStr) {
   //
        alert("parseStr " + parseStr + "\n xlatedStr " + xlatedStr);
   // }
   // return parseStr;
   //}
   return(str);
}
function rmi_parseloop(str)
   var tagStr = str;
   var newStr = "";
   while (1) {
       var left, tag, right, nexttag;
       var 1, r;
       1 = tagStr.indexOf("<");</pre>
       // if there is no "<" sign, return tagStr
       if (1 == -1) {
          newStr = newStr + tagStr;
          //alert("no < found in " + tagStr + "\n" + newStr);</pre>
          break;
       left = tagStr.substring(0, l+1);
       r = tagStr.indexOf(">");
       // if there is no ">" sign, return tagStr
       if (r == -1) {
          newStr = newStr + tagStr;
           //alert("NO > found in " + tagStr + "\n" + newStr);
       tag = tagStr.substring(l+1, r);
       nexttag = tagStr.indexOf("<", r);</pre>
       if (r < 1) {
          // if " ... > .. <...>", then add upto < and
          // then loop back
          newStr = newStr + left;
          tagStr = tagStr.substring(l+1, tagStr.length);
       } else if (nexttag == -1) {
          right = tagStr.substring(r, tagStr.length);
          tag = rmi_xlate_src_href(tag);
          tag = rmi_xlate_form_action(tag);
          tag = rmi xlate frameset(tag);
                                            // do frameset last because
extra tags are added
          if (rmi_FrameWrapperMode)
```

```
tag = rmi_doTargetInFrameWrapperMode(tag);
           else
              tag = rmi_xlate_target(tag);
           newStr = newStr + left + tag + right;
           break;
       } else {
           right = tagStr.substring(r, nexttag);
           tag = rmi_xlate_src_href(tag);
           tag = rmi_xlate_form_action(tag);
           tag = rmi_xlate_frameset(tag);
                                            // do frameset last because
extra tags are added
           if (rmi_FrameWrapperMode)
              tag = rmi doTargetInFrameWrapperMode(tag);
           else
              tag = rmi_xlate_target(tag);
           newStr = newStr + left + tag + right;
           tagStr = tagStr.substring(nexttag, tagStr.length);
           // newStr = newStr + "_" + left + "#" + tag + "#" + right + " ";
           // loop back
   if (str != "" && newStr == "") {
       newStr = str;
   if (rmi_JsDebug.indexOf(",rmi_parseloop,") != -1)
       alert("parseloop:\n" + "old: " + str + "\n" + "new: " + newStr);
   //var lowercaseStr = str.toLowerCase();
   //if ((lowercaseStr.indexOf("src=") != -1 ||
         lowercaseStr.indexOf("href=") != -1)
   //
   //
         && lowercaseStr.indexOf("image ") == -1)
   //
   //
            alert("orig " + str + "\npars " + newStr);
   //
   return newStr;
}
function rmi_xlate_src_href(str)
   var newStr = "";
   var iSearch, iFrame, iImg, length, startLoc, endLoc;
   var offset1, offset2, head, src, tail;
   var lowercaseStr = str.toLowerCase();
```

```
iSearch = lowercaseStr.indexOf("src=");
    if (iSearch != -1) {
        length = 4; // length of "src="
        // should not contain IMAGE tag
        iImg = lowercaseStr.indexOf("image ");
        if (iImg < iSearch && iImg > -1) return str;
        // should not contain IMG tag
        iImg = lowercaseStr.indexOf("img ");
        if (iImg < iSearch && iImg > -1) return str;
        iFrame = lowercaseStr.indexOf("frame");
        if (iFrame == -1) return str;
    } else {
        iSearch = lowercaseStr.indexOf("href=");
        if (iSearch == -1) return str;
        // alert("found href in " + str);
        length = 5; // length of "href="
    }
   startLoc = iSearch + length;
   head = str.substring(0, startLoc);
   offset1 = lowercaseStr.indexOf(" ", startLoc);
    if (offset1 == -1) {
        offset2 = lowercaseStr.indexOf(">", startLoc);
        if (offset2 == -1) {
            endLoc = str.length;
        } else {
            endLoc = offset2;
    } else {
        endLoc = offset1;
   src = str.substring(startLoc, endLoc);
   tail = str.substring(endLoc, str.length);
   // Ignore 'javascript:*' & RETURN original string
   if '( rmi_startsWith(src.toLowerCase(), "'javascript:") ) return (str);
   if ( rmi_startsWith(src.toLowerCase(), "javascript:") ) return (str);
   var saved_urlTarget = rmi_UrlTarget;
                                                    // saved to be restored
    if (head.toLowerCase().indexOf("frame ") != -1)
        rmi UrlTarget = "";
                                                     // <frame> will not be on
top
   newStr = head + rmi xlateURL(src) + tail;
   rmi_UrlTarget = saved_urlTarget;
                                                    // restore it
```

```
if (rmi JsDebug.indexOf(",rmi xlate src href,") != -1)
       alert("rmi_xlate_src_href\n" + "old: " + str + "\n" + "new: " + newStr);
   return newStr;
}
function rmi_xlate_form_action(str)
   var lowercaseStr = str.toLowerCase();
   var iForm = lowercaseStr.indexOf("form");
   if (iForm == -1) return str;
   // alert (str);
   var iSearch = lowercaseStr.indexOf("action=");
   var length = 7; // length of "action="
   if (iSearch == -1) {
       iSearch = lowercaseStr.indexOf("action =");
       length = 9; // one more than length of string, to allow for extra space
   if (iSearch == -1) return str;
   var startLoc, endLoc, offset1, offset2, head, src, tail;
   startLoc = iSearch + length;
   head = str.substring(0, startLoc);
   offset1 = lowercaseStr.indexOf(" ", startLoc);
   if (offset1 == -1) {
       offset2 = lowercaseStr.indexOf(">", startLoc);
       if (offset2 == -1) {
           endLoc = str.length;
       } else {
           endLoc = offset2;
   } else {
       endLoc = offset1;
   src = str.substring(startLoc, endLoc);
   tail = str.substring(endLoc, str.length);
   newStr = head + rmi_xlateURL(src) + tail;
   // alert(newStr);
   return newStr;
}
/**********************
 * Write out the 'frame wrapper'
 ***********************
function rmi writeFrameWrapper()
   document.write(rmi_FrameWrapperText);
```

```
/*******************************
 * Handle a frameset tag (for top window in FrameWrapperMode ONLY)
 ********************
function rmi_xlate_frameset(tag)
    if (! rmi FrameWrapperMode) return tag;
   if (self != top) return tag;
   var lowercaseStr = tag.toLowerCase();
   var iOpenTag = lowercaseStr.indexOf("frameset ");
   var iClosingTag = lowercaseStr.indexOf("/frameset");
   if (iOpenTag == -1 && iClosingTag == -1) return tag;
                                                         // not frameset tag
   if (iClosingTag >= 0)
                               // see </frameset>
       -- rmi FramesetTagCounter;
       // add Yahoo's </frameset> after the last frameset
       if (rmi_FramesetTagCounter == 0)
           ret = tag + ">/n</frameset";
       else
           ret = tag;
   }
   else
                               // see <frameset>
       // add Yahoo's <frameset> before the 1st frameset
       if (rmi_FramesetTagCounter == 0)
           ret = rmi_FrameWrapper + "\n<" + tag;</pre>
       else
           ret = taq;
       ++ rmi FramesetTagCounter;
                                     // count <frameset> tag
   }
   if (rmi_JsDebug.indexOf(",rmi_xlate_frameset,") != -1)
       alert("rmi_xlate_frameset:\n" + "old: " + tag + "\n" + "new: " + ret);
   return (ret);
}
function rmi xlate_target(str)
   var newStr = "";
   var iSearch, iFrame, iImg, length, startLoc, endLoc;
   var offset1, offset2, head, src, tail;
   var lowercaseStr = str.toLowerCase();
   var loc1, loc2, loc3;
   if (rmi_merchant_frames != "yes") {
       // alert("merchant frames not yes");
       return str;
   }
```

```
loc1 = lowercaseStr.indexOf("target=\" top\"");
   loc2 = lowercaseStr.indexOf("target= top");
   loc3 = lowercaseStr.indexOf("target=' top'");
   if (loc1 != -1) {
      iSearch = loc1;
      length = 13;
                              // length of target=" top"
   } else if (loc2 != -1) {
      iSearch = loc2;
      length = 11;
                              // length of target=_top
   } else if (loc3 != -1) {
      iSearch = loc3;
                              // length of target='_top'
      length = 13;
   } else {
      return str;
   startLoc = iSearch;
   endLoc = startLoc + length;
   head = str.substring(0, startLoc);
   src = "target=\"_rmi_bottom\"";
   tail = str.substring(endLoc, str.length);
   newStr = head + src + tail;
   // alert("head " + head + "\nsrc= " + src + "\ntail " + tail);
   // alert("str= " + str + "\nnew= " + newStr);
   return newStr;
/***********************
 * Get a attribute value in a tag
*********************
function rmi getTagAttribute(tag, key)
   var loc1 = tag.toLowerCase().indexOf(key);
   var loc2 = tag.indexOf("=", loc1) + 1;
                                            // plus 1 for "="
   var first = loc2;
   var last = tag.length;
   if (loc1 == -1) return "";
   var whitespace_trimmed = false;
   for (var i=loc2; i<tag.length; ++i)</pre>
   {
       var aChar = tag.charAt(i);
       if (aChar != ' ' && ! whitespace trimmed)
           first = i;
           whitespace_trimmed = true;
       if (aChar == ' ')
```

```
last=i;
           if (whitespace_trimmed) break
       }
   }
   if (first == -1)
       retTag = "";
   else
       retTag = tag.substring(first, last);
   if (rmi_JsDebug.indexOf(",rmi_getTagAttribute,") != -1)
       var msg = "key: " + key + "\n";
           msg += "old: " + tag + "\n";
           msg += "ret: " + retTag + "\n";
           msg += "first: " + first + "\n";
           msg += "last: " + last + "\n";
       alert("rmi_getTagAttribute:\n" + msg);
   }
   return retTag;
/*********************
 * Set a new attribute value in a tag
 ***********************
function rmi_setTagAttribute(tag, key, newval)
   var loc1 = tag.toLowerCase().indexOf(key);
                                             // plus 1 for "="
   var loc2 = tag.indexOf("=", loc1) + 1;
   var first = loc2;
   var last = tag.length;
   if (loc1 == -1) return tag;
   var whitespace trimmed = false;
   for (var i=loc2; i<tag.length; ++i)</pre>
       var aChar = tag.charAt(i);
       if (aChar != ' ' && ! whitespace trimmed)
           first = i;
           whitespace trimmed = true;
       if (aChar == ' ')
           last=i;
           if (whitespace_trimmed) break .
   if (first == -1)
       retTag = tag;
   else
```

```
retTag = tag.substring(0, first) + newval + tag.substring(last,
tag.length);
   if (rmi_JsDebug.indexOf(",rmi_setTagAttribute,") != -1)
       var msg = "key: " + key + "\n";
           msg += "newval: " + newval + "\n";
           msg += "old: " + tag + "\n";
           msg += "new: " + retTag + "\n";
       alert("rmi_setTagAttribute:\n" + msg);
   }
   return retTag;
/**********************
 * Handle the target within a tag in a frame wrapper mode
function rmi_doTargetInFrameWrapperMode(tagStr)
   if (! rmi_FrameWrapperMode ) return tagStr;
   var retTag = tagStr;
   // ignore frames (will not be on top)
   if (rmi startsWith(tagStr.toLowerCase(), "frame")) return retTag;
   if (rmi UrlTarget == "_top")
                                      // onTop & wrapper mode - force to encode
ALL
       retTag = rmi_encodeTarget(tagStr, "href", true);
       retTag = rmi_encodeTarget(retTag, "action", true);
                   // encode only if target==_top
   else
       retTag = rmi encodeTarget(tagStr, "href", false);
       retTag = rmi encodeTarget(retTag, "action", false);
    if (rmi JsDebug.indexOf(",rmi doTargetInFrameWrapperMode,") != -1)
       alert("rmi doTargetInFrameWrapperMode:\n" + "old: " + tagStr + "\n" +
"new: " + retTag);
   return retTag;
 * Encode a target into a URL within a tag
function rmi_encodeTarget(tagStr, key, force)
   var retTag = tagStr;
   var oldUrl = rmi getTagAttribute(tagStr, key);
```

```
if ( rmi_endsExactlyWith(oldUrl, rmi Vars) )
                                               // already encoded
      return retTag
   if (! rmi startsWith(oldUrl, rmi ProxyURL) &&
       ! rmi_startsWith(oldUrl, rmi_SecureProxyURL) )
                                                // not translated (e.g.
      return retTag
gif)
                 // force to rewrite
   if (force)
      retTag = rmi setTagAttribute(tagStr, key, oldUrl + rmi Vars);
   else
       // If target==_top
      var targetVal = rmi_getTagAttribute(tagStr, "target");
       targetVal = rmi trimQuotes(targetVal);
       if (targetVal == "_top")
          retTag = rmi setTagAttribute(tagStr, key, oldUrl + rmi Vars);
   }
   if (rmi_JsDebug.indexOf(",rmi_encodeTarget,") != -1)
      alert("rmi_encodeTarget\n" + "old: " + tagStr + "\n" + "new: " +
retTag);
   return retTag;
/********************
 * Append a string to a URL if no such string at the end yet
 ******************
function rmi_appendToUrl(url, str)
   var urlStr = "" + url;
   var ret;
   if ( rmi endsExactlyWith(urlStr, str) )
                                                        // See
/rmivars%3f...
      ret = urlStr;
   /rmivars?...
   {
      var array = urlStr.split(unescape(str));
      ret = array[0] + str;
   else
      ret = urlStr + str;
   return ret;
}
/*********************
 * Collapse a path (i.e. remove parts of a path like "dir/..")
```

```
****************
function pathCollapse(path)
   var slist = path.split("/");
   var stack = new Array();
   var counter = 0;
   for (var i = 1; i < slist.length; ++i)</pre>
      var item = slist[i];
      if (item != "..")
        stack(counter++) = item;
      else if (counter > 0)
         --counter;
   }
   stack.length = counter;
   //alert("mpath " + path + "\nmpath " + "/" + stack.join("/"));
   return ("/" + stack.join("/"));
/*********************
* Translate a string, then do eval().
************************
function rmi_eval(code)
   return eval(code);
/**********************
* This function will be overriden at run time if necessary
******************
function rmi_xjs(code)
   return code;
/***********************
 * Translate a string, then do setTimeout().
******************
function rmi_setTimeout(code, msec)
   return setTimeout(code, msec);
/***********************
* Get RMI cookies
*****************
function rmi getCookie(cookie)
   // alert("rmi_getCookie:\n" + "cookies: " + cookie + "\nrmi_cookies: " +
rmi_CurrentCookies);
   if (typeof rmi_CurrentCookies == "undefined")
      return "";
```

```
else
      return rmi_CurrentCookies;
/*****************
 * Set RMI cookies
**********************
function rmi_setCookie(cookieLHS, cookieRHS)
   // Set RMI cookie @ the server side
   var serverCookie = rmi_xlateServerCookie( cookieRHS );
   if (serverCookie == "") return;
   var newCookieTail = "path=/rmi; domain=" + rmi_CookieDomain;
   var newCookie = "rmiCookie" + (new Date()).getTime() + "=" +
escape(serverCookie) + "; " + newCookieTail;
   document.cookie = newCookie;
   // Set rmi_CurrentCookies @ the client side
   var clientCookie = rmi xlateClientCookie( cookieRHS );
   if (clientCookie == "") return;
   if (typeof rmi CurrentCookies == "undefined")
      rmi_CurrentCookies = clientCookie;
   else
      rmi_CurrentCookies += ";" + clientCookie;
/************************
 * Verify cookie's domain (before setting the cookie)
 *********************
function rmi_verifyCookieDomain(domain)
   var hostname = rmi getOriginal(window.location, 'hostname');
   if (rmi endsExactlyWith(hostname.toLowerCase(), domain.toLowerCase()) )
      return true;
   else
      return false;
}
/**********************
 * Parse a cookie string, returns a new client cookie
 * (for browsers) without path, domain, expires, & secure fields.
*************************
function rmi_xlateClientCookie(cookieStr)
   var list = cookieStr.split(";");
   var ret = "";
   for (var i = 0; i < list.length; ++i)
       // NOTE: array's length > 2 if there are more than 2 '='
```

```
var array = list[i].split("=");
       if (array.length < 1) continue;
       var key = rmi_trim(array[0]).toLowerCase();
       // Verify the cookie domain if there
       if (key == "domain")
          var domainVal = rmi trim(array[1]).toLowerCase();
           if ( rmi verifyCookieDomain(domainVal) )
                                 // OK
              continue;
           }
          else
              ret = "";
              break;
       }
       if (key == "path") continue;
       if (key == "expires") continue;
       if (key == "secure") continue;
       if (i != 0) ret += ";"
       ret += array.join("=")
   }
   return ret;
/*********************
* Parse a cookie string, returns a new server cookie
* (for rmi proxy server) with path & domain (if not there originally).
******************
function rmi_xlateServerCookie(cookieStr)
   var list = cookieStr.split(";");
   var ret = "";
   var hasDomain = false;
   var hasPath = false;
   for (var i = 0; i < list.length; ++i)
       // NOTE: array's length > 2 if there are more than 2 '='
       var array = list[i].split("=");
       if (array.length < 1) continue;
       var key = rmi_trim(array[0]).toLowerCase();
       if (key == "domain")
           hasDomain = true;
```